① Given two points, $(-1, 4)$ $(2, -2)$, find an equation for the line passing through the two points in point-slope form.

② Find the x-int. and y-int. for the line you found in #1.

③ Find the equations of the lines perpendicular to and parallel to the line in #1 and passing through the point $(1, 3)$

Warm-up 9/14/10

1) $(\underset{x_1}{-1}, \underset{y_1}{4})$, $(\underset{x_2}{2}, \underset{y_2}{-2})$

Slope: $\frac{-2-4}{2+1} = \frac{-6}{3} = \boxed{-2}$

$y = m(x - x_1) + y_1$

$y = -2(x-2) - 2$

$y = -2x + 4 - 2$

$y = -2x + 2$

$y = -2x + b$

$4 = -2(-1) + b$

$\frac{4}{-2} = \frac{2}{2} + b$

$2 = b$

$y = -2(x+1)+4$

$y = -2x - 2 + 4$

$y = -2x + 2$ ← y intercept

$0 = -2x + 2$

$+2x \quad +2x$

$\frac{2x}{2} = \frac{2}{2}$

$x = 1$ ← x intercept

$y = m(x - x_1) + y_1$

③ parallel ~ $y = -2(x \cancel{-} 1) + 3$

perpendicular ~ $y = \frac{1}{2}(x \cancel{-} 1) + 3$

$y = 3x + 5$

$y = \frac{5}{2}x + 3$

Parallel & perpendicular $(-1, 7)$ $\parallel$ & $\perp$ through $(1, 8)$

$y = m(x - x_1) + y_1$

$\parallel$ $y = 3(x + 1) + 7$

$\parallel$ $y = \frac{5}{2}(x - 1) + 8$

$y = -\frac{1}{3}(x + 1) + 7$

$\perp$ $y = -\frac{2}{5}(x - 1) + 8$

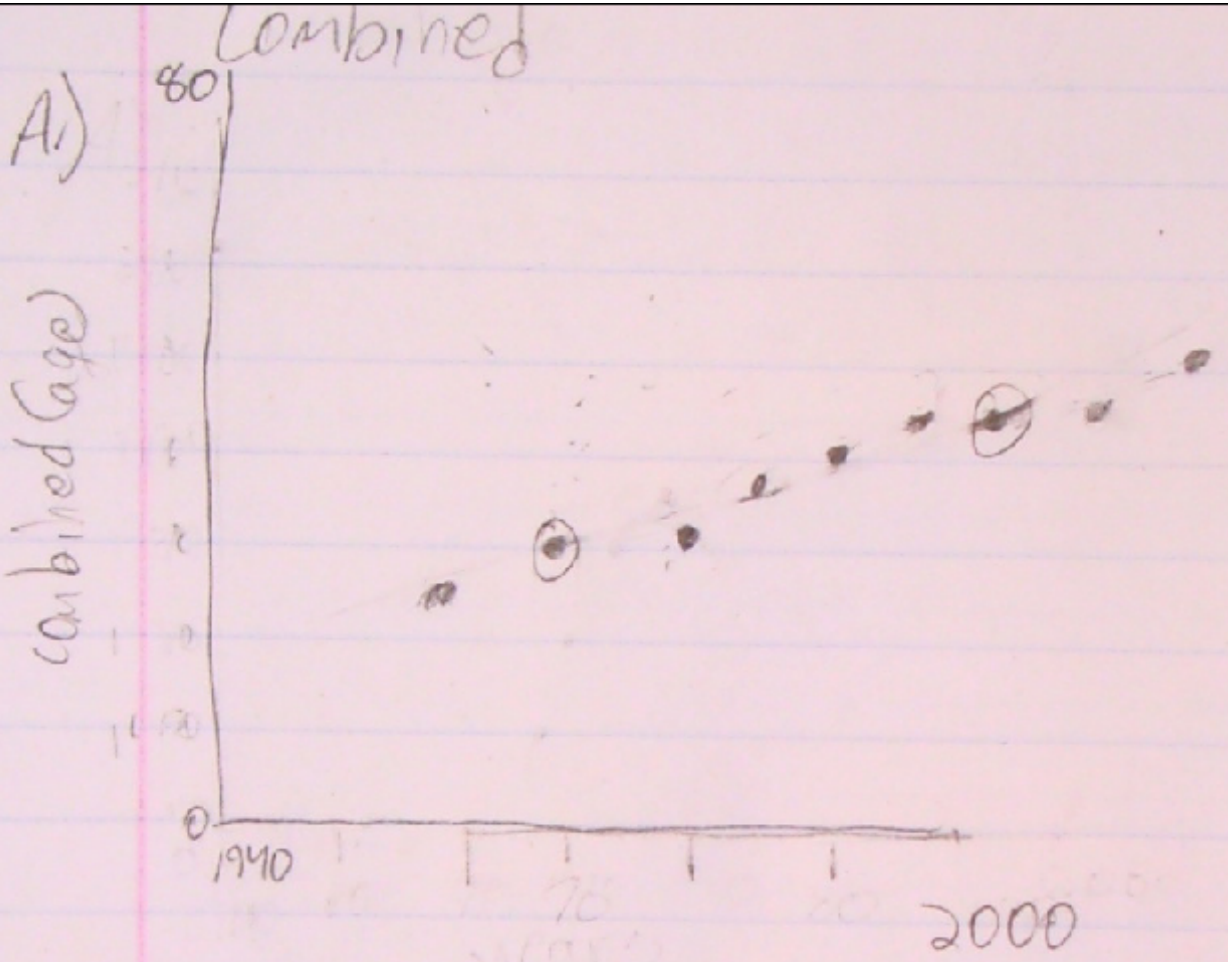
$y = -5(x-1)+3$

Find $\parallel$ & $\perp$ through $(-2, 5)$

$\parallel$ $y = -5(x+2)+5$

$\perp$ $y = \frac{1}{5}(x+2)+5$

A.)



B.) (1950, 68.2), (1985, 74.7)

$y = m(x - x_1) + y_1$

$$\frac{74.7 - 68.2}{1985 - 1950} = \frac{6.5}{35} = .19$$

C.)

$$y = .19(x - 1950) + 68.2$$

Sect. 2.2 #26, 27, 30, 38, 39, 78, 82

2.4 #19, 20